

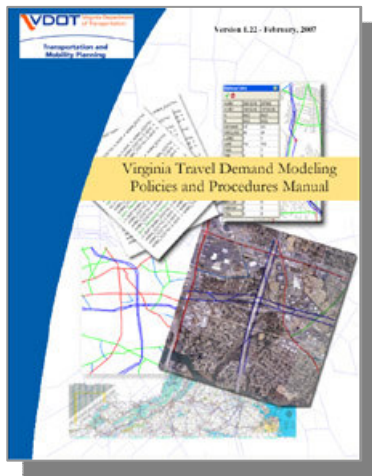


Winter 2007

VTM Connection

Virginia's Transportation Modeling Newsletter

Implementation of VTM Policies and Procedures Manual



The VTM policies and procedures manual creates consistent minimum standards and guidelines for travel demand model development and application for MPO areas entirely within Virginia. The manual was developed collaboratively by VTM members over a period of eighteen months. Implementing the new standards and guidelines for all eleven MPO models within Virginia is a large project that will involve VDOT, MPO, PDC, and consultant staff over a period of several years. Work has begun on

the travel demand models for the following areas:

1. Fredericksburg
2. Richmond/Tri-Cities
3. Roanoke
4. Winchester

Current work is focusing on improving the data inputs and file conventions for the models in these ways:

1. Standardizing file names and transportation network attributes.
2. Integrating travel demand modeling with GIS.
3. Integrating travel demand modeling with the Statewide Planning System (SPS).

Standardizing file names and network attributes will make it easier and faster for users to work with the various models. Integrating the models with GIS will enable networks to be spatially improved so that they more closely match GIS layers and provide better visual representations of transportation systems. Integration between the Statewide Planning

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KEY TRAVEL MODELING WEBSITES

➔ VDOT Travel Modeling

(Available for VDOT intranet users only)
http://insidedot/sites/Transportation_and_MobilityPlanningDivision/TravelDemandModelingProgram/default.aspx

➔ Hampton Roads PDC Travel Modeling

<http://www.hrpd.org/transport/travdeman.d.shtml>

➔ Metropolitan Washington COG Travel Modeling

<http://www.mwcog.org/transportation/activities/models/>

➔ FHWA Travel Model Improvement Program (TMIP)

<http://tmip.fhwa.dot.gov/>

MARK McCASKILL

Senior Planner, Roanoke Valley-Alleghany Regional Commission



Mark's road to becoming a senior planner for the Roanoke Valley-Alleghany Regional Commission (RVARC) has taken some interesting turns. Raised in Roanoke, he earned his undergraduate degree from the University of Richmond as a double major in Physics and French. Little did he know that both would prove instrumental in leading him into the transportation profession. After college, he spent a year in France as a foreign exchange student. During this time, Mark became interested with the French approach to land use and transportation planning and decided to pursue transportation planning as a career. But many university transportation programs would not accept students who do not possess engineering degrees.

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(SPS) and the models will have two major benefits. First, traffic counts and other traffic data will be available to assist travel demand modeling efforts. Second, travel demand forecasts will be available to planners to support forecasting efforts. VDOT staff plan to finish much of this work within the coming year (see page two).

The major model development work on revising model methodologies and structures to be consistent with the policy and procedures manual will likely begin within the next six months and continue for the next several years. This model development work will be coordinated with major data collection efforts such as the 2008 National Household Travel Survey (NHTS) Add-ons being done for MPO areas within Virginia, the 2010 Census, and 2011 CTPP. Several models will receive interim improvements to assist with short term needs and receive more comprehensive updates when the NHTS household travel survey and other data becomes available. The Virginia NHTS Add-on data is currently scheduled to be available in late 2009. Look for updates on the process of implementing the new VTM system in future editions of VTM Connection.

Linking the Richmond/Tri-Cities Model to the Statewide Planning System

By Jeremy Raw, AICP

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Planning Systems section also maintains a large database of transportation planning information known as the Statewide Planning System (SPS). SPS includes a variety of roadway inventory data, traffic count histories, and growth projections. SPS is also linked to geographic layers that permit mapping and geographic analysis. Through SPS, VDOT's transportation planning staff at Central Office and in each VDOT Districts already has access to a wide range of resources for developing and analyzing plans and projects.

Integrating travel demand forecasts into SPS has begun. When this work is complete, planners will be able to inspect forecasts for functionally classified roads in the state's urban areas under each scenario analyzed for the TIP, the Constrained Long Range plan, and other studies in many of the state's metropolitan areas. Through the forthcoming SPS map interface, planners will also have access to area maps of model outputs, including traffic volumes and volume-to-capacity (V/C) ratios indicating the forecast level of congestion. An additional benefit of this integration will be the ability to map model outputs within the Cube modeling system using geographically correct representations of network links.

The first step toward this integration has been completed by linking the Richmond/Tri-Cities base year (2000) model network to the SPS database.

NEWS BRIEFS

- **Fredericksburg MPO joins the VTM User's Group**
- **Federal TAZ-Up Process Pushed Back** The process of creating 2010 TAZ structures for all MPO Areas and Statewide (for rural areas) is now expected to start in early 2009 instead of Late 2007.
- **Citilabs CUBE 5.0 Software Coming Soon** Citilabs is planning for this new product to be available by July 1st. CUBE 5.0 will feature a new interface and be fully integrated with ESRI's ArcGIS software.

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Each link in the network that represents a segment coded into SPS has been identified by Jurisdiction, Route and Segment so that roadway attributes can be transferred back and forth between SPS and the model network. In addition, most links in the network have been linked to the TPD_ROADS geographic layer, which maps SPS segments onto VDOT's roadway centerlines.

The procedures used to attach the network to SPS are performed through Cube operations, and through geoprocessing and database scripts. Most of the procedure is automated, with several states of manual review and correction. During this work, a variety of network errors including incorrect connectivity and wrong-way links were identified. Likewise, a number of small problems with the TPD_ROADS layer and the SPS data itself have also been identified. Developing these procedures and carrying them out for the Richmond/Tri-Cities model represented just a few weeks of work, and the result is that the quality of each of the data sets has been significantly improved.

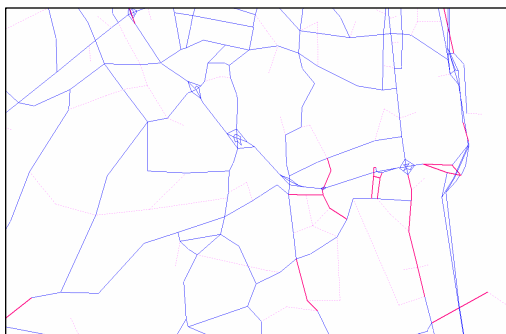


Figure 1: Without GIS TrueShape

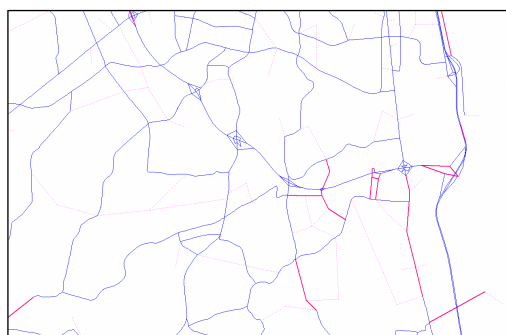


Figure 2: With GIS TrueShape

The next step in this project is to standardize the procedures by repeating them on the Fredericksburg model network and documenting the process. We expect that over the next year, additional metropolitan model networks maintained by VDOT's Central Office Planning Systems section will be linked to SPS, and metropolitan model forecasts will start to become available to VDOT planners.

VTM SPOTLIGHT *(continued)*

MARK McCASKILL

Senior Planner, Roanoke Valley-Alleghany Regional Commission

At the University of Virginia (UVA), however, Mark's Physics undergraduate degree was the key to his admission and he obtained a master's degree specializing in transportation from UVA's Civil Engineering program.

After graduating from UVA, Mark lived in Argentina for about 10 months with a family he knew from a previous foreign exchange and further developed his interest in transportation and land use planning. Upon returning to Virginia, he obtained a transportation planning position with the Lynchburg MPO where he worked for one year. But when the opportunity came to work in his native Roanoke, he accepted and has worked for the RVARC for almost seven years. After a few years, Mark was promoted to a senior planner position and is the project manager for the region's Long Range Transportation Plan. Mark is active in APA and recently obtained his AICP.

Mark speaks French and Spanish and enjoys traveling. He and his family are abroad in France this month visiting friends from past foreign exchanges. In his spare time, Mark also enjoys oil painting. Mark and his wife Angela have three children: Denise (14), Kyle (6), and Emily (3).

NEWS BRIEFS *(continued)*

- **Michael Hester Retires from VDOT** Michael retired on April 9th after 20 years with the department. Michael served as the VDOT project manager for the Hampton Roads travel demand model and helped coordinate the model outputs required for Air Quality Conformity process for many years. Michel plans to more fully pursue his growing computer graphics design business. Good luck Michael!
- **Upcoming Training/Events**
 - Peer Exchange with North Carolina Modeling Group: April 19th
 - VTM Meeting, April 25th, 2007, Videoconference
 - Virginia CTPP Training, Northern Virginia: May 1st-3rd, 2007

VTM Member Profile

Roanoke Valley-Alleghany Regional Commission

The Roanoke Valley-Alleghany Regional Commission (RVARC) serves as the Roanoke region's Planning District Commission and Metropolitan Planning Organization. With a staff of ten and annual budget of about \$1 million, the commission is responsible for regional land use and transportation planning in the state's largest metropolitan area west of Richmond. Like most of Virginia, transportation funding in Roanoke has not kept pace with transportation needs and the region is facing increasing traffic congestion and other challenges in the future.

RVARC joined the VTM user's group last Fall and is looking to use the regional travel demand model to assist in a variety of planning activities in the future from long range plan and TIP development to specific studies. Over time, RVARC staff hopes to take over responsibility for most model application work from VDOT. As one of the newest members of the VTM, RVARC is also hoping to contribute by being willing to experiment and try new procedures and to learn from the experiences of more senior VTM members.

Highlights of Virginia Travel Demand Modeling Activities

No.	District/MPO Area	Contact(s)	Current/Recent Activities
1	Washington, DC	Bahram Jamei	Activity Based Household Travel Survey Underway
2	Northern Virginia	Bill Mann	I-95/I-395 PPTA Study
3	Hampton Roads	Jeremy Raw Andy Pickard	Used model for 2030 Long Range Plan development.
4	Richmond	Jeremy Raw	Model enhancements made in preparation for Long Range Plan.
5	Tri-Cities	Jeremy Raw	Model enhancements made in preparation for Long Range Plan.
6	Fredericksburg	Nelson Newton	Continue to prepare model inputs necessary for Long Range Plan work. I-95/I-395 PPTA Study
7	Danville	Nelson Newton	Model being moved into CUBE Voyager.
8	Winchester	Juyin Chen	Model being used for Route 37 Study. Transportation network is being enhanced.

Virginia's Travel Demand Model Regions

CENTRAL OFFICE

- ① Blacksburg
- ② Charlottesville-Albemarle
- ③ Danville
- ④ Fredericksburg
- ⑤ Hampton Roads
- ⑥ Harrisonburg-Rockingham
- ⑦ Lynchburg
- ⑧ Richmond/Tri-Cities
- ⑨ Roanoke Valley
- ⑩ Winchester
- ⑪ Statewide

MPO

- ⑬ Bristol
- ⑭ Kingsport

NOVA DISTRICT

- ⑫ NOVA MWCOG

